

A. TITLE OF THE INVENTION

**SAUCES COMPRISING EMULSIFIED LIQUID SHORTENING COMPOSITIONS
COMPRISING DIETARY FIBER GEL, WATER AND LIPID.**

B. CROSS-REFERENCE TO RELATED APPLICATIONS

Not Applicable

C. STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH/DEVELOPMENT

The present invention does not involve any form of federally sponsored research or development.

D. BACKGROUND OF THE INVENTION

The present invention relates to sauces generally, and most notably cheese sauces comprising emulsified liquid shortening compositions comprising dietary fiber gel, water and lipid. Recent media attention to the global problem of obesity demonstrates a need for greater availability of foods with low caloric and fat content. This is especially true for foods that typically have high fat and caloric content, such as sauces.

Sauces, especially cheese sauces typically comprise some fat. Other ingredients can vary according to the type of sauce and the recipe followed, but typically, sauces are high in both fat and caloric content.

In recent years, some companies have begun to offer reduced fat sauces. This variety of sauce, however, often fails to retain the desirable taste and texture of sauces comprising higher fat contents.

The absence of a means to reduce the fat and caloric content of sauces while still producing a desirably flavored and textured sauce presents an unmet need in today's food industry.

E. BRIEF SUMMARY OF THE INVENTION

It is an object of the present invention to provide a unique composition of matter embodied by low-calorie and low-fat sauces. This reduction in caloric and fat content answers an unmet need

in the food industry to provide the consuming public with a healthier, higher fiber alternative to traditional types of sauces that typically are inherently fattening. It is another object of the present invention to provide sauces that have been fortified with insoluble fiber and other functional foods.

Dietary fiber gels for calorie reduced foods hold the key to meeting this need. Dietary fiber gels for calorie reduced foods are fully described in U.S. Patent number 5,766,662 (the '662 patent). These dietary fiber gels comprise insoluble dietary fibers consisting of morphologically disintegrated cellular structures, and are characterized by their ability to retain large amounts of water. Additionally, these dietary fiber gels are characterized by their high viscosity at low solid levels. Other insoluble fibers derived from cereals, grains and legumes consist of morphologically intact cellular structures, and thus impart a gritty texture to the foods in which they are contained. The dietary fiber gels disclosed in the '662 patent, however, consist of morphologically disintegrated cellular structures and thus impart a smoother texture than other insoluble fiber formulations.

More specifically, the present invention utilizes emulsified mixtures of the dietary fiber gels disclosed in the '662 patent, the emulsified mixtures further comprising, at a minimum, water and lipid. These emulsified mixtures are fully described in and are the subject of United States patent application number 10/669731 filed 09/24/2003. These emulsified mixtures, or "emulsified liquid shortening compositions comprising dietary fiber gel, water and lipid", can further comprise functional foods such as high omega three and omega six oils and pure omega three and omega six fatty acids, medium chain triglyceride, beta carotene, calcium estearate, vitamin E, bioflavonoids, fagopyritrol, polyphenolic antioxidants of vegetable origin, lycopene, luteine and soluble fiber, for example Beta-Glucan derived from yeast, and other soluble fibers derived from grain, flax seed, and other vegetable and fruit fiber sources, and any combination thereof. Hence, in addition to reducing fat and caloric content of sauces, further health benefits can be achieved by replacing a portion of fat with emulsified liquid shortening compositions comprising dietary fiber gel, water and lipid.

According to the present invention, fat and caloric content can be reduced by the replacement of the fat normally found in sauces with emulsified liquid shortening compositions comprising dietary fiber gel, water and lipid. This replacement of fat does not adversely affect either the taste or texture of the sauces. The result is that fat and caloric content of sauces can be manipulated with minimal effect on taste and texture, and as stated above, additional health benefits can be achieved through consumption of sauces comprising emulsified liquid shortening compositions comprising dietary fiber gel, water and lipid when functional foods are included in the formulations.

Further objects, advantages and features of the present invention will present themselves in the following detailed description.

F. DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

This invention is directed to sauces comprising emulsified liquid shortening compositions comprising dietary fiber gel, water and lipid. Sauces can be of a number of different varieties, including but not limited to cheese sauces, creamy type sauces, alfredo sauces, and gravies. According to the present invention, fat and caloric content can be reduced by the replacement of the fat normally found in sauces with emulsified liquid shortening compositions comprising dietary fiber gel, water and lipid (hereinafter "emulsified liquid shortening"). This replacement of fat does not adversely affect either the taste or texture of the sauces. The result is that fat and caloric content of sauces can be manipulated with minimal effect on taste and texture.

Alternatively, the sauces can be provided in the form of sauce mixes with the intention that a consumer can reconstitute and mix them at a convenient, post-purchase time, and sauce mixes are considered to be within the scope of this invention. As such, for purposes of this document, the term "sauces" is defined to include sauce mixes.

According to the present invention, sauces can be formulated such that the sauces comprise 0.5 percent to 7.0 percent dietary fiber gel solids by replacing an appropriate amount, that is, prorated to deliver this range of dietary fiber gel solids, of fat, including oil and liquid shortening,

75 with an essentially identical amount of emulsified liquid shortening. The result is that fat and caloric
76 content of sauces can be manipulated with minimal effect on taste and texture, and as stated above,
77 additional health benefits can be achieved through consumption of sauces comprising emulsified
78 liquid shortening compositions comprising dietary fiber gel, water and lipid when functional foods
79 are included in the formulations.

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